IQ Scientific SmartLogger II
User Guide

Terms of Use

The Software contains proprietary and confidential information that is protected by applicable intellectual property and other laws. You may not modify or sell works based on the Software.

The Software is for your personal use. We grant you a personal and non-exclusive license to use the object code version of the Software on a single Windows-based personal computer; provided that you do not (and do not allow any third party to) copy, modify, reverse engineer, create derivative works from, assign or otherwise transfer any right in the Software; and you will not modify the Software by any means.

Disclaimer

The "Product" is the complete SmartLogger II product including meter, software, user manual, and packaging.

IQ Scientific Instruments, Inc. assumes no responsibility for any loss or claim by third parties which arise through the use of this Product. IQ Scientific Instruments, Inc. assumes no responsibility for any damage or loss caused by deletion of data as a result of a Product malfunction. Be sure to backup copies of all important data on other media to protect against data loss.

The Software, and all accompanying files, data and materials, are provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The entire risk as to the quality and performance of the Software is with you. Should the Software prove defective, you assume the cost of all necessary servicing, repair or correction.

IQ SCIENTIFIC INSTRUMENTS, OR ITS PRINCIPALS, SHAREHOLDERS, OFFICERS, EMPLOYEES, AFFILIATES, CONTRACTORS, SUBSIDIARIES, OR PARENT ORGANIZATIONS, SHALL NOT BE LIABLE FOR ANY INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR OTHER DAMAGES INCLUDING BUT NOT LIMITED TO, LOSS OF PROFITS, LOSS OF REVENUE, LOSS OF DATA, LOSS OF USE OF THE PRODUCT OR ANY ASSOCIATED EQUIPMENT, DOWNTIME AND CONSUMER'S TIME OR FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY OR CONDITION, DAMAGE TO THE VEHICLE, BREACH OF CONTRACT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER LEGAL THEORY RELATED TO THIS PRODUCT.

Copyright

Trademarks

Windows® is a registered trademark of Microsoft Corporation.

Table of Contents

Preface

Congratulations on your purchase of an IQ Scientific "GLP"-series meter with SmartLogger II software. Please take time to read through these operating instructions and become familiar with the operating procedure.

The SmartLogger II software allows you to connect a Windows PC to your meter using either Bluetooth or USB. The software features live data logging, uploading meter log or store data, reviewing calibration history and more.

Key Features

SmartLogger II offers a multitude of meter management features:

- Record live data from the meter

- User configurable continuous data-sampling rate from 1 second or longer

- Single sample mode to add 1 sample at a time

- Save and open previously recorded or imported data

- View and record pH, dissolved oxygen, temperature, total dissolved solids, conductivity, salinity and barometric pressure

- View data using a line graph or tabular format

- Annotate each reading with a note

- View the meter calibration history

- Remotely set meter settings such as date and time

- Export the data into a comma delimited format suitable for import into a spreadsheet

- Upload log and store data within the meter

- Bluetooth and USB support

- Supports Windows 98 and higher

Minimum Platform and Software Requirements

You must have one of the following operating systems with Microsoft Internet Explorer 5.01 or later installed on your computer:

- Microsoft® Windows® 98

CARDIGAN®

Guatemala - (502) 2310 9494, El Salvador - (503) 2208 4102, Honduras - (504) 516 1620
sales@cardigan.pro   www.cardigantrading.com

- Microsoft® Windows® 98 Second Edition

- Microsoft® Windows® Millennium Edition (Windows Me)

- Microsoft® Windows NT® 4 (Workstation or Server) with Service Pack 6a

- Microsoft® Windows® 2000 (Professional, Server, or Advanced Server) with the latest Windows service pack and critical updates available from the Microsoft Security Web site (www.microsoft.com/security).

- Microsoft® Windows® XP (Home or Professional)

- Microsoft® Windows® XP Media Center Edition

- Microsoft® Windows® XP Tablet PC Edition

- Microsoft® Windows® Server 2003 family

- Microsoft® Windows® Vista

Minimum hardware requirements:

- Pentium 300MHz or faster

- 128MB of RAM or higher

Abbreviations and Definitions

DO – Dissolved oxygen

ISE – Ion Specific Electrode

TDS – Total Dissolved Solids

BAR – Barometric Pressure

SAL – Salinity

mV - milliVolts

COND - Conductivity

CSV – Comma Separated Values

Installing Windows Software

Loading the SmartLogger II software onto your personal computer is easy. This section shows you how.

Uninstall Previous SmartLogger II software

Uninstall all previous versions of the SmartLogger II software before proceeding.

1   From the Start menu, select Settings > Control Panel.

2   Double-click on Add/Remove Programs.

3   Click the Install/Uninstall tab, if your Windows version includes it.

4   From the list of programs that you can remove, select IQ Scientific SmartLogger II.

5   Click Add/Remove.

6   At the prompt, click Yes to confirm that you want to remove the IQ Scientific SmartLogger II program.

7   When the files are removed, the uninstall program indicates that the process is complete.

Upgrade Internet Explorer

The SmartLogger II software relies upon Microsoft Internet Explorer version 5.01 or later. The version is located on the Help > About Internet Explorer menu option within Internet Explorer. If you do not have version 5.01 or later, download it free from Microsoft using the following Internet web link:

http://windowsupdate.microsoft.com

Software Install on Windows Vista

Before starting the installation, the current user account must have Administrator privileges.

1   Close all other programs and windows.

2   Insert the CD labeled SmartLogger II into your CD-ROM drive.

3   The installation should start automatically. If not, from the Start menu select Run.

4   Type **D:\setup** (substitute the appropriate letter of your CD-ROM drive for D).

5   Follow the instructions on the screen.

If the software will not install on Windows Vista, please follow these steps.

1   Close all other programs and windows.

2   Insert the CD labeled SmartLogger II into your CD-ROM drive.

3   Using Windows Explorer, go to the setup.exe file on the CD ROM.

4   Right mouse click on setup.exe.

5   In the Properties dialog, click on the Compatibility tab.

6   Click on the checkbox "Run this program as administrator".

7   Double click the setup.exe to start the installation.

8   Follow the instructions on the screen.

Software Install on Windows 98/ME/2000/XP

Before starting the installation, the current user account must have Administrator privileges.

1   Close all other programs and windows.

2   Insert the CD labeled SmartLogger II into your CD-ROM drive.

3   The installation should start automatically. If not, from the Start menu select Run.

4   Type **D:\setup** (substitute the appropriate letter of your CD-ROM drive for D).

5   Follow the instructions on the screen.

Bluetooth

Your PC must have a Bluetooth wireless adapter if you want to communicate wirelessly to the meter. Many different types of wireless adapters exist. Some PC's have Bluetooth built-in or an external Bluetooth USB dongle may be used.

The Bluetooth Serial Port Service is required to communicate with the meter. The first time the meter is used with a PC it will need to be "paired". The meter Bluetooth pairing passkey (password) is 1234. Enter this number when asked by your Bluetooth software.
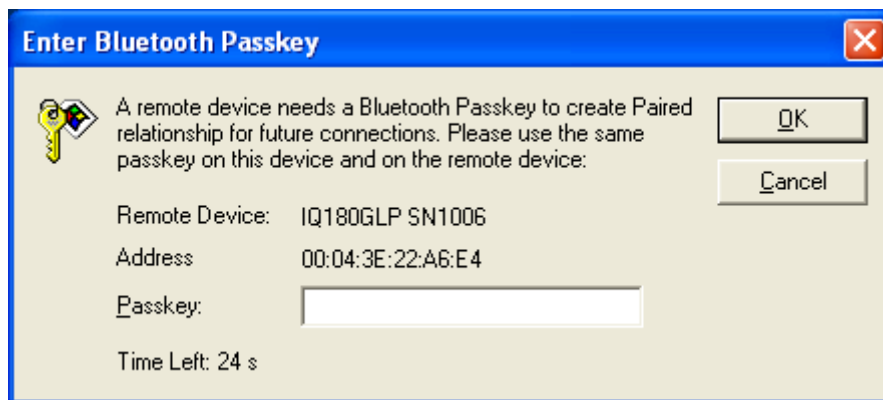
When correctly installed and enabled, the Bluetooth Serial Port service will create a virtual COM port (e.g. COM6). The SmartLogger II software will use this COM port to communicate with the meter.

To enable Bluetooth communications with a meter follow these basic steps:

1   Turn on the IQ Scientific "GLP"-series meter.

2   Ensure your PC Bluetooth wireless adapter is enabled.

3   Select the Bluetooth Device Discovery witin your PC's Bluetooth software. The software should locate the meter with a device name similar to "IQ180GLP SN10000".

4   Select the Pair Device Bluetooth software feature and enter the passkey 1234.

5   Select connect to Serial Port Service using the Bluetooth software.

6   The Bluetooth icon on the meter display should now be illuminated and a virtual COM port assigned.

7   Start the SmartLogger II software. Select the File > Find Meters menu option. See Set COM Port Automatically (Find Meter) on page 7 for more information.

8   Your meter is now connected to the SmartLogger II software and ready for use.

Each Bluetooth software package is different. Refer to your Bluetooth software documentation for exact instructions on how to wirelessly discover Bluetooth devices and enable the Bluetooth Serial Port Service on your PC.

Virtual Serial COM Port

When either the USB driver or the Bluetooth driver is installed a virtual COM port is created and assigned a number (e.g. COM9). The Windows Device Manager shows all assigned port numbers. Open Device Manager by doing the following:

1   Click on "Start" and then "Control Panel".

2   Switch to Classic View (if in Category View).

3   Double click on "System".

4   Select the Hardware tab.

5   Press the "Device Manager" button.

6   Click on the "+" next to Port.

7   The COM ports available on your PC are displayed. Note the USB virtual COM port will only display when the meter is plugged into the PC.
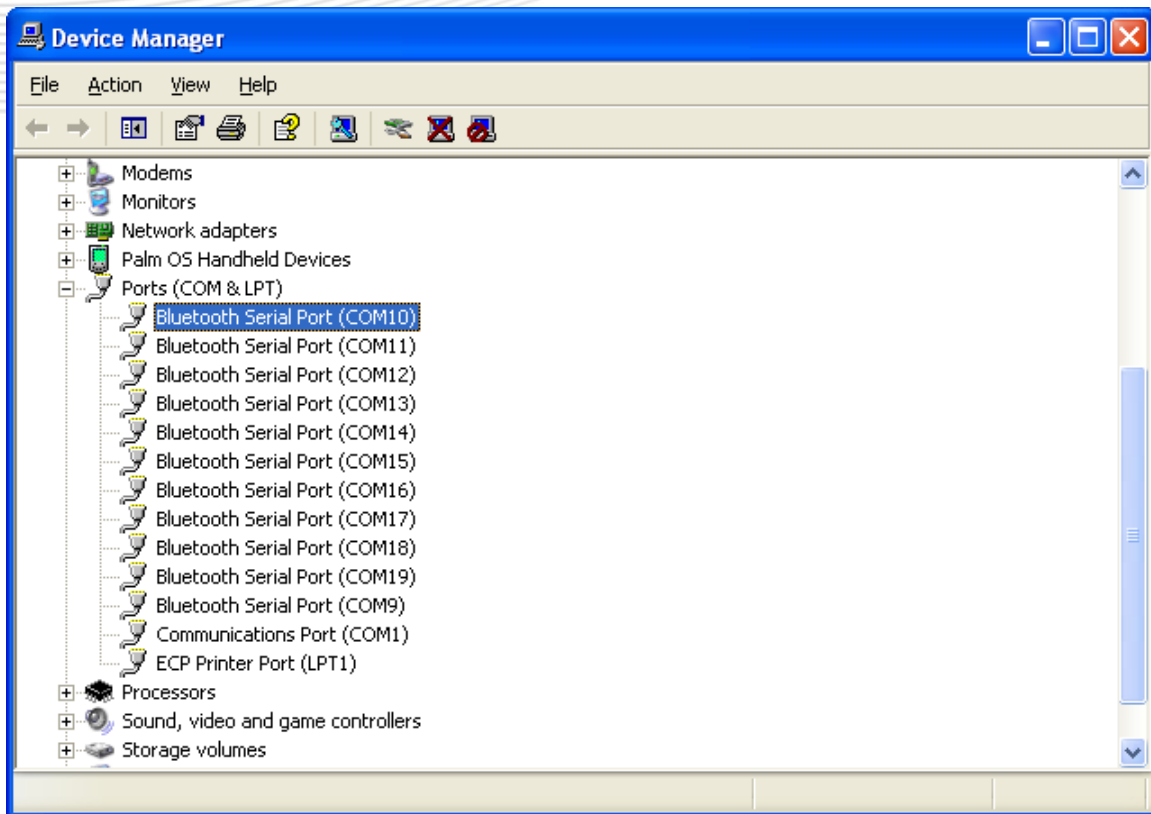
Figure 1: Bluetooth Virtual Serial COM Ports

Software Updates

Check the IQ Scientific website periodically to download software updates at
www.phmeters.com.

Connections

Connecting your IQ Scientific Instruments "GLP"-series meter to a Windows PC is easy. This section shows you how.

Bluetooth Connection

1   Enable the Serial Port Service as explained in Bluetooth Connection on page 7.

2   Proceed to either Set COM Port Automatically or Set COM Port Manually below.

Set COM Port Automatically (Find Meter)

The SmartLogger II software can automatically detect your meter and COM port for you.

1   Connect the meter to the PC using a USB cable.

2   Start the SmartLogger II application.

3   Select the File > Find Meter menu option.

4   Press the Find Meters button. Within a minute or two the software will find your meter and display the COM port options.

5   Select the COM port on the Meters Found dropdown menu then press OK. If multiple meters are found, the serial number of each meter is listed next to the COM port.
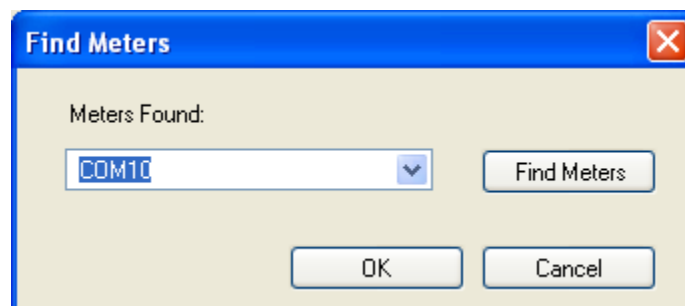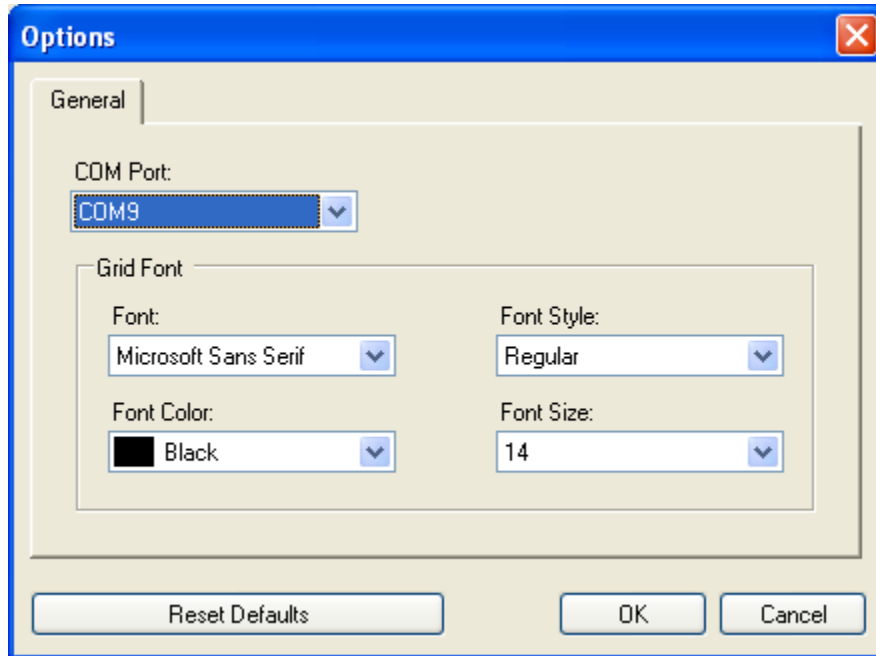

6   The COM port only needs to be set once. The SmartLogger II software remembers its last COM port setting every time the software is started.

7   Your SmartLogger II software and meter are now ready for use.

Set COM Port Manually

To set the COM port manually, follow these steps.

1   Start the SmartLogger II application.

2   Select the Tools > Options… menu selection.

3   On the COM Ports dropdown select the COM port.

4   Press the OK button.

5   The COM port only needs to be set once. The SmartLogger II software remembers its last COM port setting every time the software is started.

6   Your SmartLogger II software and meter are now ready for use.

Software Operation Overview

The SmartLogger II software is designed for easy operation. This section provides a high level overview of the various software features and screens.

Start SmartLogger II Software

Start the SmartLogger II software on the personal computer by double-clicking SmartLogger II icon located your desktop. You can also start the software using the Windows Start button > SmartLogger II > SmartLogger II.

Software Overview

The SmartLogger II software enables you to get the most from your IQ Scientific Instruments "GLP"-series meter. There are two main screens within the SmartLogger II software: Data View and Calibration History.

CARDIGAN®

The Data View screen allows viewing and logging real-time meter data. Logged data can be viewed in a tabular format on the Table pane or in graphical format on the Graph pane. The Live Data pane always shows the most current meter reading regardless of whether the software is logging or not.

The Calibration History screen allows viewing the last 10 calibrations stored within the meter.

Each screen has multiple window "panes" for displaying different types of data. For instance, the Data View has three types of panes: Live Data, Table and Graph.

A right mouse click on most screen elements brings up a shortcut menu of options. For instance, right mouse click inside the Live Data pane to display a shortcut menu of options.

An Options dropdown button in the upper right hand corner on a pane provides access to a menu of options specific to the pane. Just left mouse click the Option button to display the shortcut menu.

Docking windows on the right and left sides of the main screen provide Navigation, File Properties and Meter Properties views. These docking windows can be moved or hidden for a full, unobstructed view of your data.

The software saves and opens logged or imported meter data. All data can be exported into a comma separated value file (CSV) for importing into Excel.

The sections that follow will explain in detail the usage of each software feature.

Options Dialog

The COM Port setting on the Options dialog General tab selects the personal computer COM port to use. Make sure the selected COM port matches the meter's virtual COM port.

The Grid Font properties set the font, color, style and size of the text on the Live Data pane.
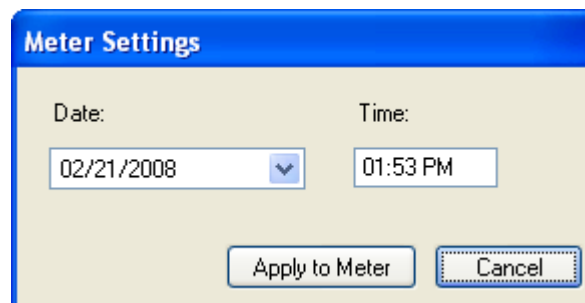
The Reset Defaults button sets all settings back to their default state.
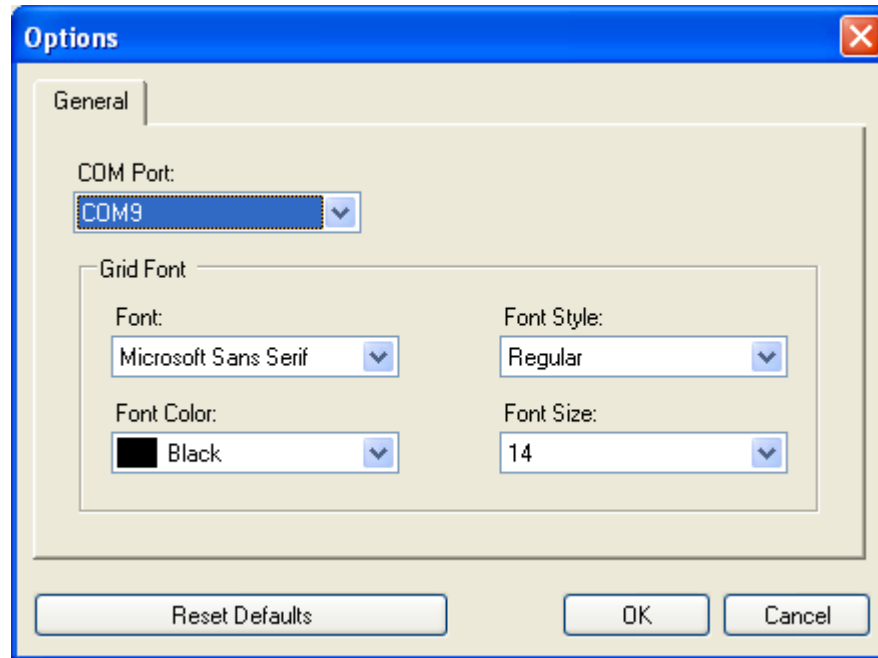
Meter Settings Dialog

The Meter Settings dialog allows you to set the meter's internal data and time. The initial values for Data and Time are the current time as read from Windows PC clock.

Press the Apply to Meter button to set the time on your meter. Press Cancel when complete.

Terminal Dialog

The Terminal dialog allows you to manually send and receive from the meter remote interface protocol messages. To send a message, type the command in the Meter Send text box and

press the Enter key. The Meter Receive text box displays the meter response. Press the Clear button to clear the send and receive text boxes.
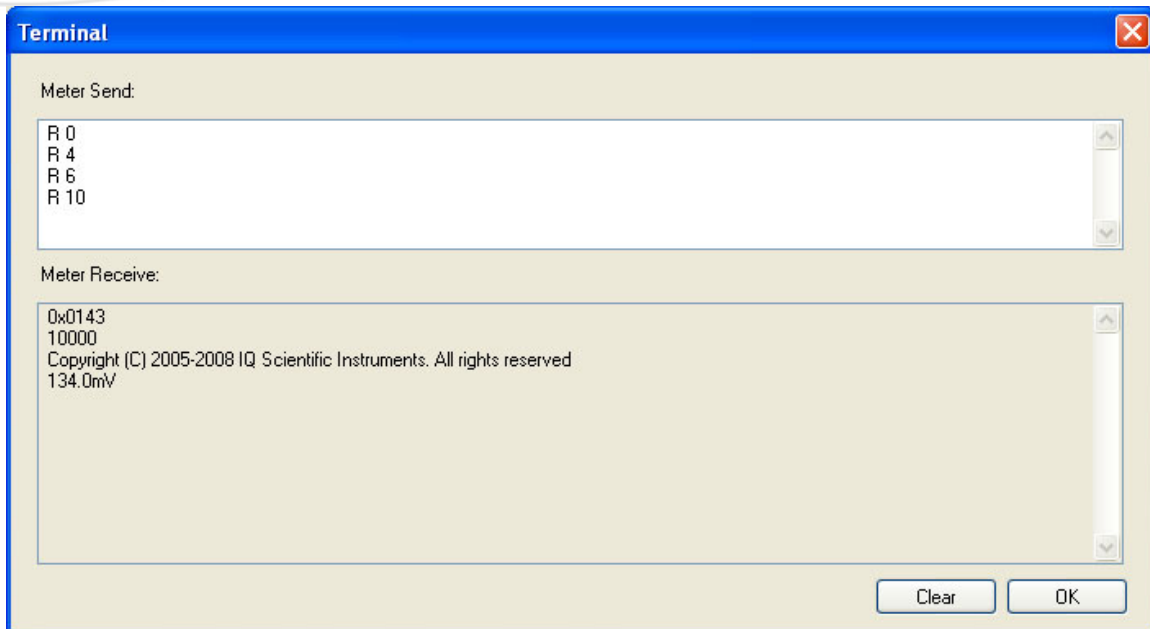

Window Panes

Each main screen has one or more windows panes. If multiple panes are used, they can be resized using the horizontal splitter bars separating each pane. Right mouse click inside a pane to show a shortcut menu of options. Optionally, left mouse click the Options button in the upper right corner of each pane to display the shortcut menu.

The X in the upper right corner closes a pane. To display the pane again, right mouse click inside any pane and select "Add <pane name> Pane" from the shortcut menu where <pane name> is the pane to add. For instance, selecting "Add Graph Pane" will add a new Graph pane to your data view.

Docking Windows

The program contains three docking windows: Navigation, File Properties and Meter Properties. Each docking Window may be resized, hidden, or slide-in or slide-out from a docked position on demand.
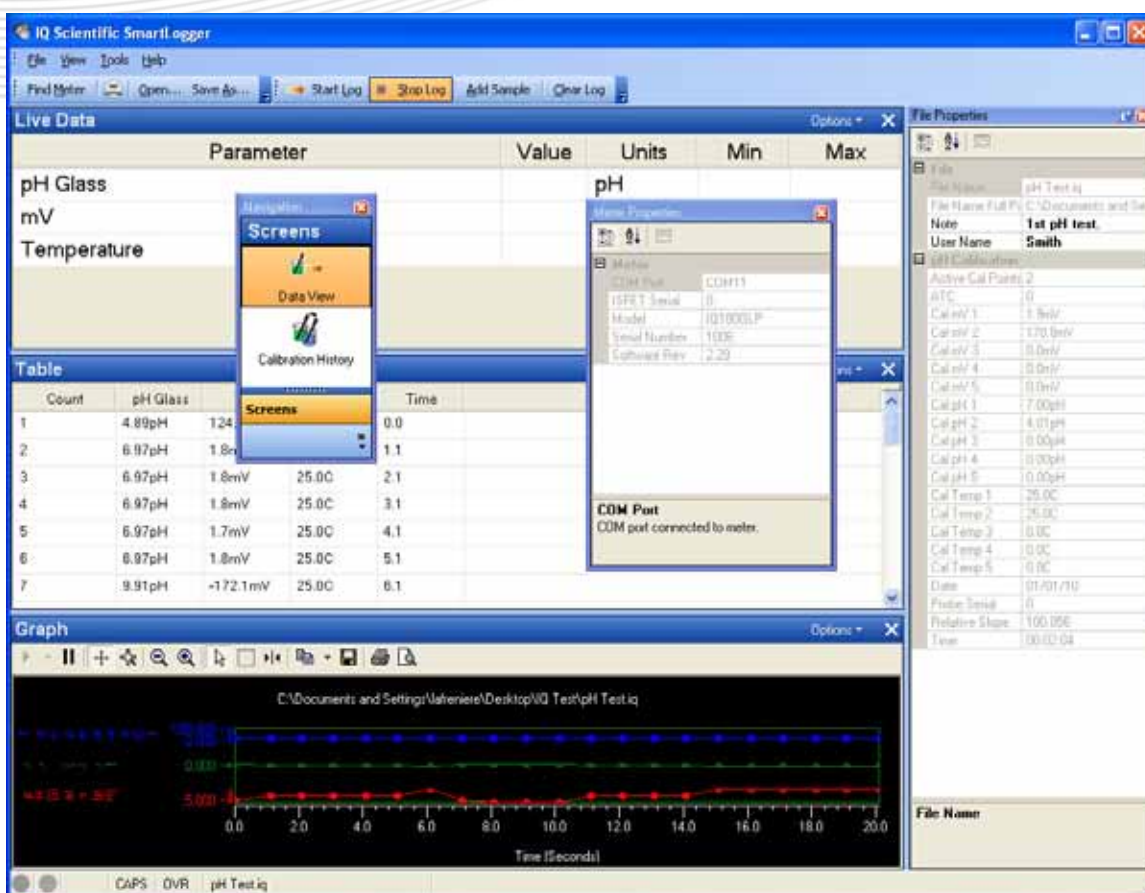
- To hide a docking window, click the red X close button in the upper right corner.

- To hide a docking window with slide-in, press the pushpin icon in the upper right corner. The window will slide in and hide itself.

- To show a hidden docking window, select the View menu option (e.g. View > Navigation).

- To show a docking window with slide-out, place the cursor over the docked window name or icon. The window will slide out showing itself.

- If a docking window is not visible, the View menu option will redisplay any of the docking windows.

- To move a docking window from dock to float, either drag window title bar to a new location or double click the title bar.

- To move a docking window from float to dock, either drag the window title bar to one of the four window edges (top, bottom, left, right) or double click the title bar.

Properties Window

Properties values are shown in certain docking windows, such as File Properties as shown below.

All property windows share the same behavioral traits, such as:

- Properties displayed in bold font may be modified.

- Properties display in grey font cannot be changed.

- Any property changes are immediately saved to disk.

- Pressing the '+' or '-' icon next to a bold heading expands and collapses the data within the heading.

To change a property value, click the parameter and type in a new value. The change is immediately saved to disk.

CARDIGAN®

Navigation Docking Window

The Navigation docking window is used to switch main screen.
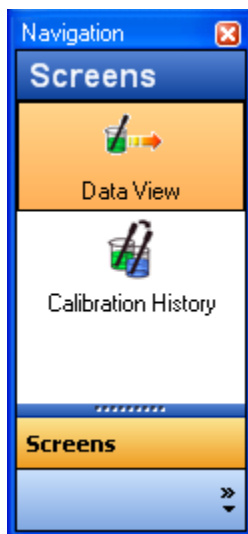
To switch screens, simply click one of the icons within the Navigation window.
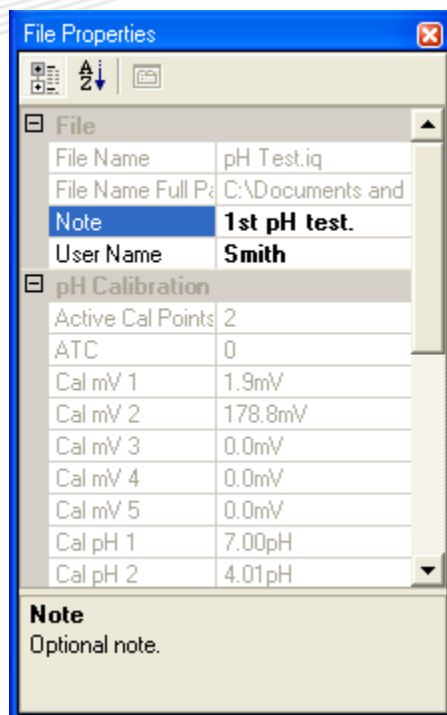
File Properties Docking Window

The File Properties docking window displays the file properties whenever a file is saved or opened.

The File heading within the File Properties window displays information regarding the file name, path, user name and an optional note.

The calibration heading shows the last calibration performed on the meter at the time the log file was saved. The calibration-heading name will show the type of calibration performed. For instance, in the File Properties screen below shows "pH Calibration" was the last calibration type performed.

The information grouped under the calibration heading shows the details of the last calibration performed at the time the file was saved. Information such as the number of calibration points and the data and time the calibration was performed is shown.

If no file is currently opened or saved, the File Properties docking window will remain blank.

Meter Properties Docking Window

The Meter Properties docking windows show information about the meter currently connected such as serial number, software revision and COM port used.
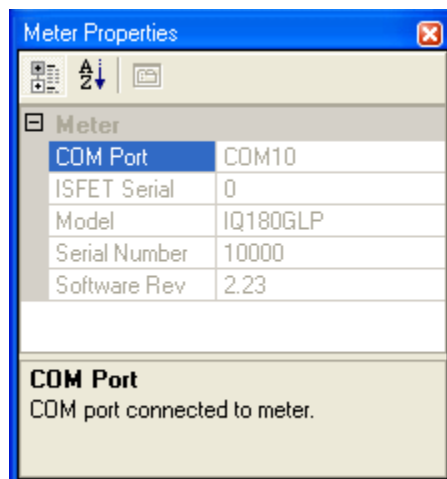
Toolbars

Toolbar locations, docking position, buttons shown, and sizes are completely user customizable.

- To move a docked toolbar, left mouse click and drag the vertical dashed line on a toolbar. Alternatively, double click the dashed line to move the toolbar into a floating position.

- To move a floating toolbar, left mouse click the title bar and drag to its new location. Alternatively, double click the title bar to put the toolbar back into its docked position.

- To move toolbar to a new docked location, left mouse click and drag the toolbar to a new edge of the screen. The toolbar can be docked to any of the four application window edges (top, bottom, left, right).

- To customize the buttons shown on the toolbar, click the down arrow located on a docked toolbar to show a toolbar shortcut menu. Alternatively, right mouse click on any blank location within the toolbar area to show the shortcut menu.

- To change to change various toolbar and menu options, such as enable/disable toolbars or change the icons from large to small, select the toolbar shortcut menu then select the Customize… option.
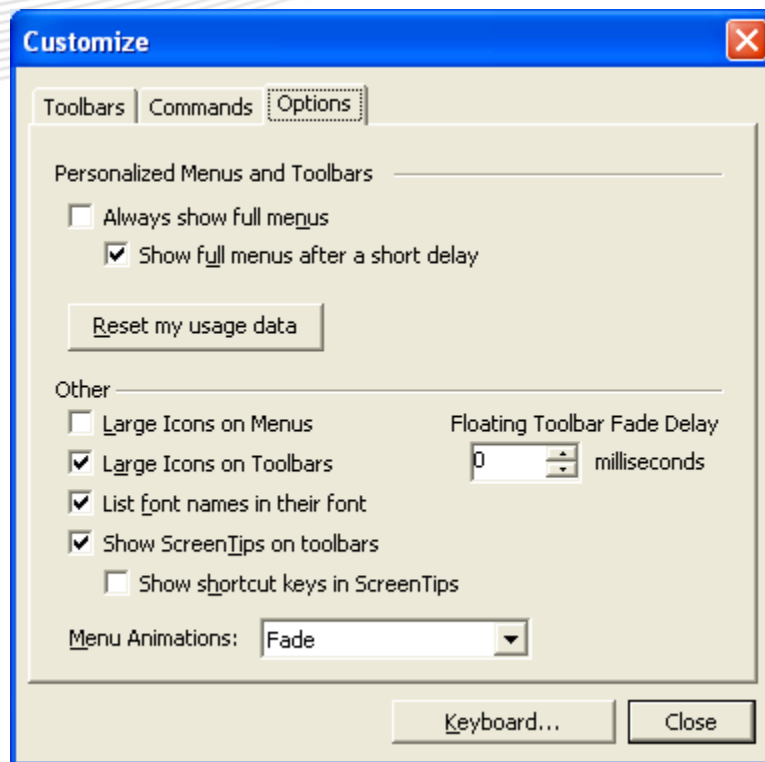
Figure 2: Customize Toolbars and Menus Dialog

Status Bar

The status bar is located at the bottom of the program screen. It displays the following information from left to right:

Red Transmit Dot – flashes red when the PC transmits data to the meter.

Green Receive Dot – flashes green when the PC receives data from the meter.

NUM – displays NUM when the Num Lock on the keyboard is active.

CAPS – displays CAPS when the keyboard Caps Lock is active.

INS – displays INS when the keyboard text insert mode is active and OVR when the text overwrite mode is active.

File Name – displays the currently opened file name.

Data View

This section shows how to operate the Data View screen within the software. The Data View screen allows viewing live data transmitted from the meter; recording live data and importing log or store points.

Live Data Pane

The Live Data screen has three main panes: Live Data, Table and Graph.

Figure 3: Live Data Screen

The Live Data pane is used to select the monitored meter parameters. The Live Data pane has five columns of data.

Parameter – the name of the monitored parameter

Value – the current value of the parameter as read from the meter

Units – the parameter units of measure

Min – the minimum value read by the software during this session

Max – the maximum value read by the software during this session

To reset the Min and Max values on the Live Data pane, right mouse click inside the Live Data pane and "Reset Min Max".

Edit Parameters Dialog

To monitor live data parameters from the meter follow these steps.

1 Right mouse click inside the Live Data pane and select Edit Parameters from the shortcut menu. Alternatively, left mouse click on the Live Data pane Options button and select Edit Parameters.

2 Select the Mode from the dropdown menu.

3 Enter the Log Speed in seconds.

4 Select the parameter by checking the Select checkbox next to each parameter name.

5 Select the Units for each parameter by placing the cursor over a Units value then click the dropdown arrow and select new units of measure.

6 Press OK.

7 The software will display live data within the Live Data pane.

Every time new parameters are selected, the log history is erased. You are given an opportunity to save the log history before changing parameters.

Log Speed

The Log Speed value controls how fast the software logs data on the Graph and Table panes. If you select a value of 5 seconds a new Table and Graph data point will show every 5 seconds.

The Live Data pane is always refreshed once a second regardless of the Log Speed value.

Mode Control

The software uses the Mode value and automatically commands the meter into the appropriate mode. For instance, if you select Conductivity mode on the Edit Parameters dialog, the software places the meter into Conductivity mode after the OK button is pressed.

If you accidentally press a mode button on the meter while logging, the software will stop logging and notify you of the mode change. You will be given the option to continue logging or stop.
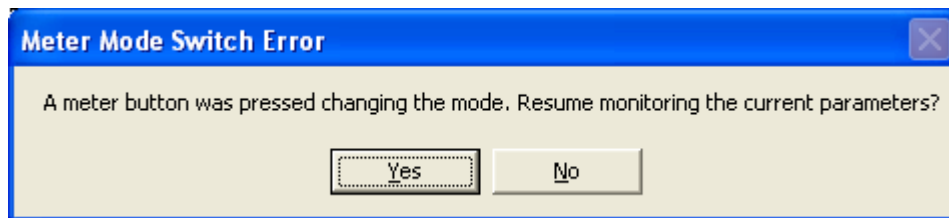
Default Units of Measure

The default Units for each parameter displayed on the Edit Parameters dialog is read from the meter. For instance, if you have configured your meter to display temperature in Celsius, the software will display the 'C' as the default selection.

Data Logging

The Data Logging toolbar controls the data flowing into the log history. The log history stores the live data obtained from the meter. The Table and Graph panes show the data within the log history.

When Start Log button is pressed, live data will flow into the log. Stop Log stops the flow of data. The rate at which data is placed into the log is controlled by the Log Speed parameter on the Edit Parameters dialog.

Press the Add Sample button to add one sample to the log. Press the Clear Log button to clear the data within the log.

The example below shows the typical data logging steps.

1   Select the Data View icon from the Navigation docking window.

2   Ensure you have a Live Data, Table and/or Graph pane displayed.

3   Right mouse click in the Live Data pane and select Edit Parameters.

4   Select the parameters to monitor as explained in Edit Parameters Dialog on page 20. Select a Log Speed of 1 second.

5   Press the Start Log toolbar button if it's not already depressed.

6   Data will start showing in the Live Data, Table and Graph panes.

7   Press the Stop Log button.

8   Press the Add Sample button to add one more data sample.

9   Select File > Save As… and enter a file name for the log file (e.g. TestFile). Your data is now saved.

10   Select File > Open… to open your file at a later time.

Saving Log Data

Data stored in the log history is not saved to disk until you select the File > Save As… option. Until then, the data is stored in a temporary buffer.

Table Pane

The Table pane shows the log history in a tabular format. The number columns will change depending on the parameters selected. Regardless of the meter parameters selected, three columns are always present:

Count – the data sample log number

Time – the time the reading was taken in seconds

Note – an optional user entered note

The Note field is used to enter an optional text note for a particular data sample. To add a note, left mouse click into any Note cell and type a message for your note.

Multiple Table Panes

Multiple Table panes may be viewed simultaneously. Both Table panes will show the same log data. This can be helpful with large log files if you want to view different log locations at the same time. For instance, the first table pane scrolled to show data samples 10 to 20 and the second Table pane views data 100 to 110.

To add another Table pane, right mouse click inside a table and select "Add Table Pane".

Graph Pane

The Graph pane displays real-time sensor readings from the meter in a line graph format. Multiple parameters can be shown simultaneously on the graph.

Numerous options are available for viewing the data, such as a stacked or side-by-side view, hiding traces, zoom in and out, and markers showing each data point.

The graph control is very dynamic. You can "grab" most screen elements by holding the left mouse button down and dragging the mouse to cause axes to move or the graph to scroll.

Shortcut menu options are available by right mouse clicking a graphical element. For instance, right mouse click a graph x-axis to view a shortcut menu options.

Tracking

Tracking on the graph is when the graph automatically scrolls left to keep the most current data point in view. The most current data point is located on the far right of the graph.
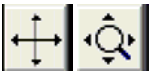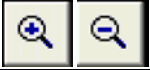
The Tracking Pause button pauses the tracking and allows viewing the data without the graph scrolling. Zooming any axis will also automatically pause tracking.

The Tracking Resume button resumes the tracking and zooms all axes to their default tracking zoom scale.

When the Tracking Resume button is pressed, the axes go back to their default tracking zoom scaling. If you want to update the default tracking zoom factor, right mouse click an axis and select Update Resume Values from the shortcut menu. Alternatively, you can select from the axis shortcut menu Zoom to Fit > All. Now, whenever Tracking Resume or Tracking Enable is selected the zoom level will return to the set factor.

Analyze Tool Bar

The toolbar provides quick and easy control over the function of the chart.

Button	Meaning
▶	**Tracking Resume Button**: Resumes graph tracking so that the most current data point is in view.
‖	**Tracking Pause Button**: Pauses tracking for all axes.
↔ ⟳	**Axes Mode Buttons**: Changes the mode that the axes are in when using the mouse. The first icon puts the axes in scroll mode. The second icon puts the axes in zoom mode. **TIP**: Press the Ctrl keyboard key to toggle between the two modes.
🔍+ 🔍−	**Zoom In/Out Buttons**: Zooms all axes in or out. Alternatively, left mouse click one axis and the zoom in/out buttons will zoom only the selected axis.
▷	**Select Button**: Used for selecting items in the data view area.
▢	**Zoom Box Button**: Allows the user to draw a "Zoom Box" to zoom ALL axes.
▶|◀	**Data Cursor Button**: Show or hide all data cursors. Values for each channel are displayed in a hint window next to the cursor(s).
🗐	**Copy Button**: Copies the current component image to the clipboard.
💾	**Save Button**: Save chart data to an image or data file.
🖨	**Print Button**: Print image of chart to printer.

Options Button

The Options dropdown button on the upper right corner of the Graph pane title bar provides a menu to graph features.

Shortcut Menu	Meaning
Side-By-Side View	Switches between Side-By-Side view and the Stacked view.
Show Markers	Shows a round dot on each data point.
Show File Name	Shows the file name at the top of the graph.
Show Legend	Shows a trace legend on the right side of the graph.
Show All Parameters	Shows every parameter on the screen.
Hide All Parameters	Hides all parameters on the screen.
Parameters	Shows/hides individual parameters on the graph.

Axis Control

The chart has two axes, one x-axis (horizontal) and one or more y-axis (vertical). Each axis shows the name of the parameter, units of measure, and numbers showing the axis scale.

The chart has two main modes, Axis Scroll mode and Axis Zoom mode. The modes are switched using the Axis Scroll or Axis Zoom buttons on the toolbar.

Many options require dragging, which means pressing and holding the left mouse button while moving the mouse.

If you drag an axis while in Axis Scroll mode, the axis will scroll back and forth. If you drag an axis while in Axis Zoom mode, the axis will zoom in and out.

The entire graph can be dynamically zoomed or scrolled if you drag the center of the graph in any direction. Axis Scroll and Axis Zoom modes control whether the chart is dynamically zoomed or scrolled when dragged.

Pressing and holding the keyboard Ctrl key is a shortcut to toggling between Axis Zoom and Axis Scroll modes.

Zoom All Axes

Toolbar Zoom: All axes can be zoomed together using the toolbar.

1   Left mouse click anywhere inside the line graphing area (a dotted box will surround the entire axes and line graphing area).

2   Press the Zoom In or Zoom Out toolbar button.

Zoom-Box Zoom: All axes can be zoomed using the Zoom-Box tool.

1   Select the Zoom-Box button on the toolbar.

2   Click inside the line graph area and drag a dotted line box around the area to zoom in.

Mouse Zoom: The entire graph area can be dynamically zoomed using the mouse.

1   Press the Axes Zoom toolbar button.

2   Press the Select toolbar button.

3   Drag the line graphing area to dynamically zoom both the x and y-axes. Drag left and right zooms the x-axis, and up and down zooms the y-axis.

Zoom One Axis

Toolbar Zoom: Each axis can be zoomed independent of the other using the toolbar zoom buttons.

1   Press the Axis Zoom toolbar button.

2   Select an axis to zoom with the left mouse button (a dotted box will surround the axis).

3   Press the Zoom In or Zoom Out toolbar button.

Mouse Zoom: Each axis can be dynamically zoomed using the mouse.

1   Select the Axis Zoom button on the toolbar.

2   Drag an axis to zoom in and out.

Shortcut Menu Zoom: The software can also zoom a parameter to fit the entire graphing area.

1   Right mouse click an axis and select from the shortcut menu Zoom To Fit > All or Zoom To Fit > In-View. The All option zooms the line based upon the data points in the entire recorded file. The In-View option only zooms the data points that are visible within the graphing area.

Scroll One Axis

Mouse Scroll: Once an axis is zoomed, it can be scrolled up and down.

1   Press the Axis Scroll toolbar button.

2   Drag an axis to scroll.

Scroll All Axes

Mouse Scroll: The entire graph area can be scrolled in any axis direction by mouse dragging. The chart must be zoomed on at least one axis before you can drag the chart.

1   Press the Axis Scroll toolbar button.

2   Drag the graph in any direction causes dynamic zooming in and out.

Data-Cursor Control

The Data-Cursor is a red crosshair within the graphing area. Dragging the crosshair vertical line moves the cursor. As the cursor is moved, the tooltip shows the current x/y value. If the Options > Show Markers is on, round markers will mark each individual data point. Tooltip values between actual marker data points are interpolated.

The data cursor can be moved to a data point marker.

1   Drag the cursor close to the marker you want to measure.

2   Release the left mouse button. The cursor will snap to the closest marker providing an exact value of the data point.

Moving the data-cursor between parameters uses the shortcut menu.

1   Right mouse click anywhere on the cursor crosshair lines.

2   Select Channel from the shortcut menu, then the parameter to monitor.

The data-cursor has many different measurement modes selected from the Style shortcut menu:

- Value-XY
- Value-X
- Value-Y
- Period
- Peak-Peak
- Frequency

Analyze Data Export

The Graph pane can export data into a data file or graphics file. Live data can also be exported to CSV file using the Export feature. See Export on page 31.

Save Button

The Save button on the graph toolbar saves the graph as a graphics image file or as a text data file (.dat). The text data file is saves a series of X and Y values for each parameter. The file can be opened with any text editor or with a spreadsheet such as Microsoft Excel.

Copy Button

The Copy button on the graph toolbar copies the data into the Windows clipboard as either a graphics image file or as text data. Once copied, the data can be pasted into another application such as word processor.

Multiple Graph Panes

Multiple Graph panes may be viewed simultaneously. Both Graph panes will show the same log data.

To add another Graph pane, left mouse click the Options button and select "Add Graph Pane" from the shortcut menu.

Calibration History

The Calibration History screen reads the calibration history from the meter. This section shows you how.

The meter can store up to 10 calibrations. There are five different types of calibration.

- pH Calibration
- Conductivity Calibration
- TDS Calibration
- DO Calibration
- ISE Calibration
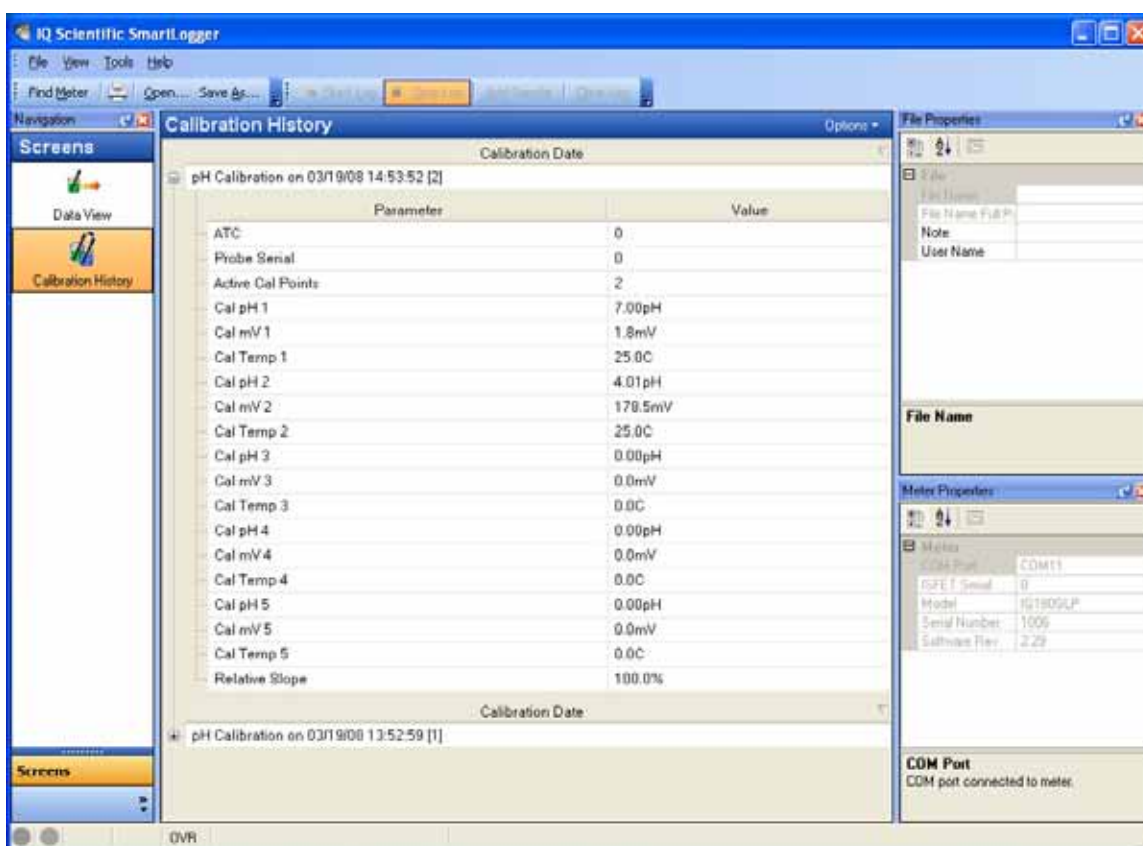
Select the Calibration History icon on the Navigation docking window to switch to the Calibration History screen. The software automatically starts uploading and displays the calibration history.
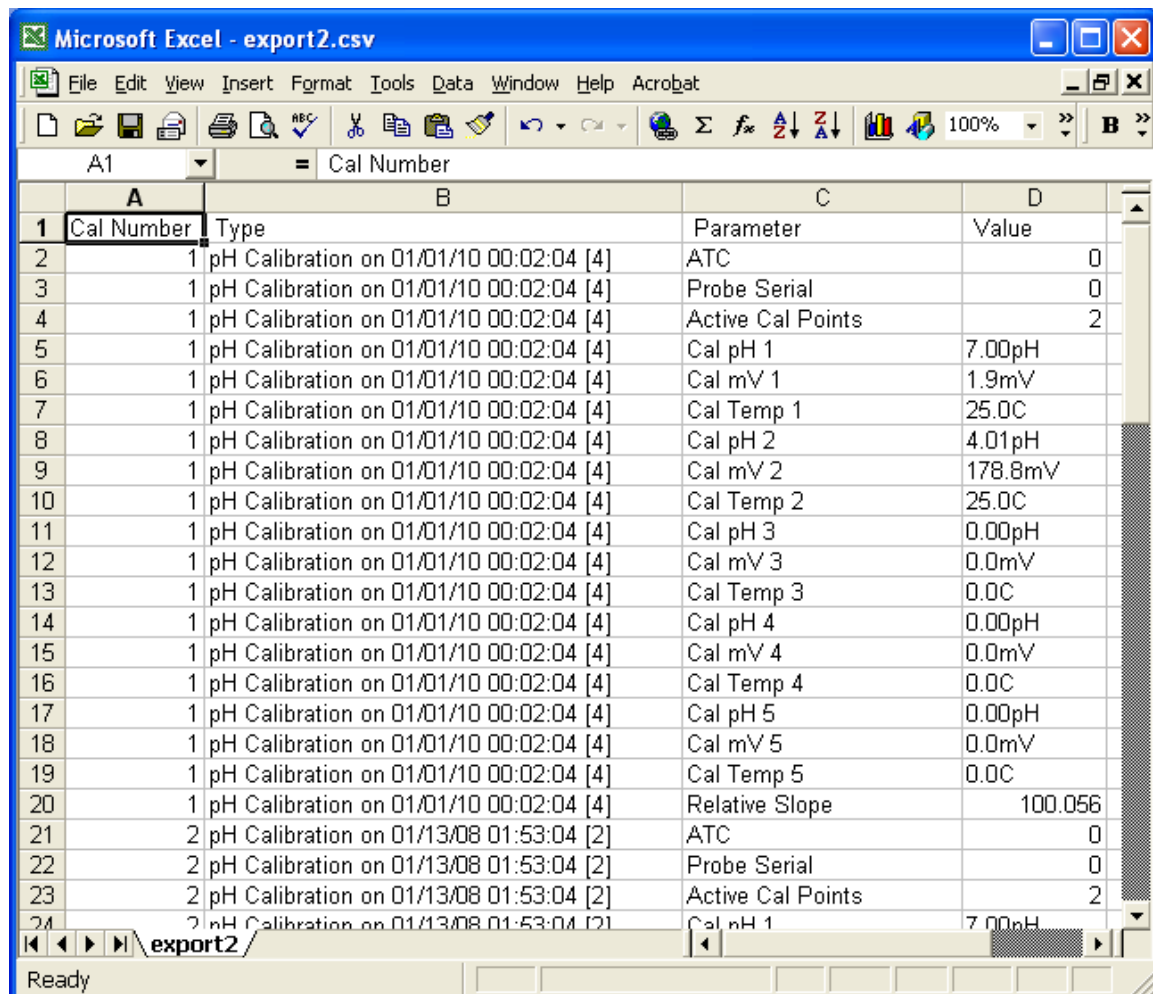
The calibrations returned are sorted by data and time with the most recent calibrations at the top. Pressing the '+' icon next to the calibration type shows the data values associated with the calibration.

When viewing the calibration history, the software continues to log data uninterrupted.

Export Calibration History

The calibration history can be exported to a comma separated value (CSV) file. Left mouse click the Options button in the upper right corner of the Calibration History pane and select Export… from the shortcut menu.

Once calibration history is exported, it can be viewed in a spreadsheet program such as Excel.
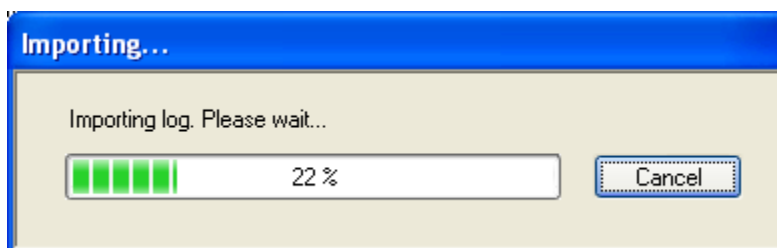
Import

The IQ Scientific Instruments "GLP"-series meter has two different types of internal data logging storage: log points and store points – with a total storage of up to 999 data points.

Log points are automatically saved at a data-logging interval set on the meter. Store points are stored manually one at a time.

The meter internal log points are imported using the File > Import menu option. Once imported, you view and save the data.

To upload log points and save to data to disk follow these steps.

1 Ensure the meter log has some data points stored.

2 Select the File > Import > Log Points… menu option.

3 Wait for the import to complete.

4 When complete, the log data imported is displayed on the Table and Graph panes within the software.

5 Select the File > Save As… menu option to save the data to disk.

Mixed Mode Log Data

The meter data log may contain different types of data. For instance, pH, ISE and DO may all be saved into the data log. Furthermore, the data samples may be taken at widely different dates and times.

If the imported data contains data points from different meter modes and/or dates, the software will still show all data. Just note the following:

1 The Graph pane will show groups of samples clustered around a data/time separated by a long time gap between the next groups of samples. Use the Graph pane "Show Markers" options to see round dots drawn on the graph where the actual data points occur. Zoom in using the Zoom-Box toolbar button to zoom into the group of samples.

2   The Table pane will have some blank column values if the meter log is mixed with different types of data.

Export Log Data to CSV File

Once data is imported into the software it can be exported. To export data to a CSV file see Export on page 31.

Export

Log history data viewed within the Table and Graph data may be exported to a comma separated value file (CSV) suitable for import into a spreadsheet. This section shows you how.

To export data view values to a CSV file follow these steps.

1   Go to the Data View screen by pressing the Data View icon in the Navigation docking window.

2   Ensure the Table and/or Graph pane is displayed on the Live Data screen. If not, right mouse click and select Add Graph Pane or Add Table Pane from the shortcut menu.

3   Right mouse click in the Live Data pane and select Edit Parameters from the shortcut menu.

4   On the Edit Parameters dialog select one or more parameters to monitor with a one second log speed. See Edit Parameters Dialog on page 20 for more information on how to select parameters.

5   Press the Start Log button if not already depressed.

6   Wait for some data to display within the Table and/or Graph pane.

7   Press the Stop Log button.

8   Select the File > Export > Log File… button.

9   On the Export Log File dialog enter a file name to store the data and press OK.

10   The data is now saved to disk ready for opening with a spreadsheet program like Excel.

Microsoft Excel - export.csv

File Edit View Insert Format Tools Data Window Help Acrobat

A1 = Number

	Number	pH Glass	Units (pH)	mV	Units (mV)	Temperature	Units (C)	Time (Seconds)	Note
1	Number	pH Glass	Units (pH)	mV	Units (mV)	Temperature	Units (C)	Time (Seconds)	Note
2	1	4.63	pH	140.4	mV	25	C	0	
3	2	6.97	pH	1.8	mV	25	C	5	
4	3	6.97	pH	1.8	mV	25	C	6.1	
5	4	6.97	pH	1.8	mV	25	C	7.2	
6	5	6.97	pH	1.8	mV	25	C	8.1	
7	6	9.89	pH	-171	mV	25	C	9.1	
8	7	9.93	pH	-173.6	mV	25	C	10.1	
9	8	9.97	pH	-175.6	mV	25	C	11.2	
10	9	9.49	pH	-147.5	mV	25	C	12.1	
11	10	3.98	pH	178.8	mV	25	C	13.1	
12	11	3.98	pH	178.8	mV	25	C	14.1	
13	12	3.98	pH	178.8	mV	25	C	15.2	
14	13	6.97	pH	1.8	mV	25	C	16.1	
15	14	6.97	pH	1.8	mV	25	C	17.1	
16	15	9.97	pH	-175.7	mV	25	C	18.1	
17	16	9.97	pH	-175.7	mV	25	C	19.2	
18	17	9.97	pH	-175.8	mV	25	C	20.1	
19	18	3.98	pH	178.8	mV	25	C	21.1	
20	19	3.98	pH	178.8	mV	25	C	22.1	
21	20	3.98	pH	178.8	mV	25	C	23.1	
22	21	6.97	pH	1.7	mV	25	C	24.1	
23	22	6.97	pH	1.7	mV	25	C	25.1	
24	23	-2	pH	592	mV	25	C	26.1	
25	24	4.7	pH	136.3	mV	25	C	27.1	

export

Ready

32 **Export**

CARDIGAN®

Guatemala - (502) 2310 9494, El Salvador - (503) 2208 4102, Honduras - (504) 516 1620
sales@cardigan.pro   www.cardigantrading.com

Troubleshooting

This section contains solutions for common problems encountered with the software.

Can't Communicate With Meter

Ensure the USB/Bluetooth driver is installed and a virtual COM port assigned. See Connections on page 7 for more information on how to establish communication with the meter.

CARDIGAN®

Guatemala - (502) 2310 9494, El Salvador - (503) 2208 4102, Honduras - (504) 516 1620
sales@cardigan.pro   www.cardigantrading.com